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Hugh G. Calkins  
Regional Conservator

A PROBLEM STUDY OF CONSERVATION AND LAND USE  
For Older Students

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A PROBLEM STUDY OF CONSERVATION AND LAND USE  
by Julia B. Tappan

A Message to Teachers

A problem plan of study offers an interesting approach with older pupils, as it is elastic enough to fit into varying organization plans: land use and conservation may be used as a core study in a functional organization or as a logical phase of the more formally organized classes of social science, general science, English, agriculture, et cetera.

By definition a "problem" indicates a need for solution and must therefore be approached through a knowledge of the situation and an understanding of causes. A pat answer or the search for a panacea is not the objective of any such study, as many of the aspects of our complex and changing modern life are not susceptible of easy solution. Students, however, may gather together the best available knowledge and opinions, may discover and set down the concepts and principles involved in the problems, and may work out a solution insofar as possible.

In presenting the following outline, it should be remembered that it presents only a few suggestive topics and problems, and that varying topics and problems will be developed with varying groups and situations.

The outline is based on general land conditions and problems in the Southwest. A specific study may be centered around local situations and problems, and then progress to regional, national, or international conditions.

At the beginning of the study broad topics are suggested in the form of questions. These questions, kept in mind throughout the study, may be answered at the end by each student on the basis of his own findings and judgment.

The outline itself falls into two major parts, the first part organizing for the teacher the theory of conservation and land use, based on authentic information. Agencies and other sources of information are listed. The second part of the outline suggests experiences through problem studies whereby the student may acquire the theory of conservation and land use.

Direct observation and field trips are of major importance and should be used as extensively as possible. There is also a wealth of information and data available from printed and visual material. Newspapers, radios, magazines, movies are constantly depicting or commenting on land use, conservation, flood control, et cetera. Many important laws have been and are being passed. Many state and government agencies exist to deal with these problems. In short, soil conservation and land use will be found a topic of current interest.







## OUTLINE OF PROBLEM STUDY

### I. Introduction

The following questions are presented at the beginning of the study, not to be answered until adequate data are at hand, but to be kept in mind throughout the study, and to be answered at the end in the light of the student's findings and opinions.

Why study conservation and land use?

(Land a basic resource. Our dependence on it for food, shelter, clothing, et cetera.)

Why is the use or misuse of land of interest or concern to everyone?

(Reduced resources, future generations, flood, dust storm, destruction of property, et cetera.)

What is conservation?

(Wise use now and for future. In case of renewable resources, sustained production.)

Why is conservation necessary in the United States?

(Exploitation of resources. Soil losses, mineral losses, forest, wildlife, et cetera.)

Upon whom does good land use depend, in addition to land users themselves?

(Watershed, interrelationships of land, flood control, et cetera.)

What are physical results in maladjusted land use? Social and economic?

(Destruction of property, floods, dust storms, et cetera. Reduced value of land, delinquent taxes, stranded populations, et cetera.)

How can the individual help solve the problem?

(Attitude as citizen and voter; write, talk, et cetera.)

How can the group help solve the problem?

(Local, state, federal; laws, planning, management, et cetera.)



## II. The Theory of Land Use and Conservation

At the end of each section are listed some United States government publications\* and sources of information where authoritative statements may be found.

### A. Some basic concepts

1. Dependency of people on soil and water and other natural resources
2. The interrelationships of soil, water, vegetation, climate, topography, and animals (including man)
3. The behavior of soil and water
4. Process of erosion (geologic and man-made)

References: Little Waters, To Hold This Soil, What Is Soil Erosion

### B. Some land-use agencies and sources of information

1. Federal, state, and community services, such as Soil Conservation Service, Forest Service, Bureau of Agricultural Economics, Weather Bureau, Grazing Division, University, libraries, Farm Security Administration, State College. Extension Service, National Resources Committee, Agricultural Adjustment Administration, et cetera.
2. A library corner or collection may be fascinatingly current: recent novels based on land use in specific regions, magazine articles, newspaper clippings, government bulletins and reports. A good beginning (obtainable from this office unless otherwise indicated) would be:

What Is Soil Erosion?

To Hold This Soil

Taming Our Forests

Soil Defense of Range Lands in the Southwest

Some Materials for Land-Use Experiences: A Bibliography

A Tentative Outline for High Schools

Land Policy Review (Bimonthly). Subscriptions for sale by Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 25 cents per year. One issue contained such articles as: Steel Mules; Trade War in the States; The Ubiquitous City; Wanted: Population Adjustment, Too; Come Out of the Ivory Tower, Doctor; Farmer-Made Programs in a Texas County; Canada's Land of Little Rain; Book reviews.

\*Limited quantities available free of charge or on loan from Division of Education-Information, Soil Conservation Service, Albuquerque, New Mexico, unless otherwise indicated.





# 11. The Theory of Land Use and Conservation (continued)

## C. Types of surveys and fact finding

1. Population
2. Land tenure
3. Soils
4. Vegetation
5. Erosion
6. Rainfall

References: Soil Conservation Service Area offices  
National Resources Committee reports  
Soil Conservation Survey Handbook

## D. Some evidences of maladjustment

1. Unemployment
2. Tax delinquency
3. Stranded populations
4. Land condition
  - a. Erosion
    - Flood damage
    - Gullies
    - Reduced acreage of cultivated land
    - Diminished water supply
    - Silt damage
    - Dust storms
    - Sheet erosion
  - b. Vegetation
    - Depleted ranges
    - Cutover forests and woodlands
  - c. Decreased crop production

References: Reports from county and state agencies  
Soil Erosion, a Critical Problem in American Agriculture  
(Part V), and other National Resources Committee reports



E. Planning land use

1. Individual (farm and ranch unit)
2. Community or district
  - a. Soil Conservation District
  - b. Grazing district
  - c. County planning boards
3. State and federal
  - a. State planning boards and zoning agencies
  - b. State College and Extension Service
  - c. Agencies listed under B-1

References: Write agencies listed

Soil Conservation Districts for Erosion Control  
National Resources Planning Facts and other National  
National Resources Committee reports  
Rural Zoning and Your County

F. Land use and erosion control practices (based on watershed or area treatment)

1. Farm management
2. Range management
3. Forest management
4. Water resources management
5. Wildlife management
6. Flood control, including protective work such as silt traps, detention dams, jetties, et cetera

References: Soil Defense of Range and Farm Lands in the Southwest  
Taming Our Forests

G. Cooperation in planning, land use, transportation, selling, and buying

Reference: Consumers' Guide (Biweekly). Free when individually requested from Consumers' Counsel Division, Agricultural Adjustment Administration, Department of Agriculture, Washington, D. C. In a series of articles on milk, for example, such aspects were included as dairymen's problems, the problems of milk marketing, the methods of handling milk, milk laws and regulations, advice on the selection and use of dairy products.

H. Some ways of informing community

1. Articles for local paper
2. Visual presentation
3. Maps of home, farm, and of community conditions
4. Meetings
5. Radio, et cetera





### III. Student Survey - Background of Student and Community

The background furnished by the student himself may be supplemented by records, surveys carried on by organizations, bulletins, discussion with farmers and ranchers, field trips, et cetera.

#### A. Family survey

##### 1. Ethnic and cultural background

Race, nationality, language, religion, customs, et cetera

##### 2. Main livelihood

- |                                    |   |
|------------------------------------|---|
| a. Farming - owner or tenant       | d. Lumbering                            |
| b. Stock raising - owner or tenant | e. Wage work                            |
| c. Mining                          | f. Length of time in present occupation |

#### B. Community land survey

##### 1. Types of lands

- a. Irrigated farmland area
- b. Dry farmland area
- c. Rangeland area
- d. Forest, timberland area

##### 2. Watershed area

- a. Waterways
- b. Topography
- c. Size of watershed

##### 3. Ownership of land

- a. Public or private
- b. Owner operated or tenant operated

##### 4. Farm or ranch unit

- a. Subsistence or commercial
- b. Crops raised
- c. Kinds of stock
- d. Size of unit
- e. Land use - dry or irrigated, woodlots, rotation of crops, seasonal grazing, et cetera
- f. Water supply

##### 5. Some evidences of maladjustment

- a. Unemployment
- b. Tax delinquency
- c. Stranded populations
- d. Land condition

- (1) Erosion - Flood damage, gullies, reduced acreage of cultivated land, diminished water supply, silt damage, dust storms, sheet erosion
- (2) Vegetation - Depleted range, cutover or burned over forests and woodlands
- (3) Decreased crop production



## V. Types of Land-Use Problems

The students, having ascertained facts concerning the community, correlate and integrate the facts in order to state the major land-use problems.

### A. People and basic resources

- Problem 1. In what ways is your community dependent on soil and water? (Food, clothing, shelter, banks, transportation systems, et cetera.)
- Problem 2. What is the source of water supply in your community? (Springs, wells, reservoirs, et cetera.) How is it affected by use of watershed?
- Problem 3. How is your livelihood influenced by climate, topography, et cetera?
- Problem 4. How are plants, animals (including man), soil, water, inter-dependent?
- Problem 5. How does the use of one area of land influence the condition of another area?

### B. Adjustment of people to local conditions

- Problem 1. What (if any) segment of the population is best adjusted to local conditions? (Spanish, Indian, Mormon, et cetera.) What factors in their background have made this possible? (Customs in cultivating crops, similar land conditions or climate before migration, tradition of land ownership, et cetera.)
- Problem 2. To what extent do the available resources of the region supply the needs of the local population? population outside region?
- Problem 3. To what extent are outside markets available for surplus products? (Transportation facilities, et cetera.)
- Problem 4. How is land use adjusted to conditions of topography, climate, soil conditions, et cetera? Is any submarginal land in use?
- Problem 5. What proportion of the population is directly dependent on land? (Farming, stock raising, forest, et cetera.) What proportion indirectly? (Lumber mill, stockyards, et cetera.)





#### IV. Types of Land-Use Problems (Continued)

- Problem 1. What changes have occurred in the native vegetation of your area? What has caused this damage? (Effects of man's use, animals, cutting lumber, mining, roads, et cetera.)
- Problem 2. Have any changes occurred in water supply in your community since first settlement?
- Problem 3. Have any changes occurred in animal population to your knowledge? (Wildlife, stock, et cetera.)
- Problem 4. What population changes have occurred? What changes in livelihood? Ghost towns?
- Problem 5. Are there any signs of erosion (gullies, wind erosion, sheet erosion, flood damage) and what are the causes (climatic conditions, cut-over upper watershed, overgrazing, cultivation methods)?





## V. Types of Planning Problems

Having stated the land-use problems and sought to answer them as nearly as possible, plans are made at different levels to alleviate conditions.

### A. Individual planning

#### Subsistence Unit

Problem 1. What should be the size of farm or ranch unit?

Problem 2. How should unit be planned? (Stock, crops, woodlot, et cetera.)

Problem 3. What measures can be taken to improve sustained production from small irrigated farm to supply family with food, fuel, clothes, cash, et cetera?

Problem 4. What measures can be taken to improve sustained production and family subsistence on small dry farm?

#### Commercial Unit

Problem 5. What are some measures for a large farm unit?

Problem 6. What are some measures for a large grazing unit?

### B. Group planning (community, area, watershed, or region)

Problem 1. Will cooperative planning for land use benefit your farm? How? How can it be accomplished?

Problem 2. What erosion control measures can be taken cooperatively in wind erosion areas?

Problem 3. Will watershed planning and control benefit you, and how?

Problem 4. Will city planning benefit you, and how? (Flood, sewage, stream pollution, water supply, et cetera.)

Problem 5. Will cooperative buying and selling benefit you and how?

Problem 6. What federal, state, and local groups are available for planning, consultation, and aid?

Problem 7. How would a Soil Conservation District benefit your community?



## V. Types of Planning Problems (Continued)

### C. Erosion and other control practices to be employed in A and B

Problem 1. What are some principles of range management? Apply to your own situation. (Number of stock, distribution, seasonal grazing, et cetera.)

Problem 2. What are the principles of forest management? Apply to your own situation. (Fuel and lumber from woodlot and forest on sustained yield basis, fire protection, et cetera.)

Problem 3. What are the principles of farm management? Apply to your own situation. (Tillage methods, rotation, crop residues, woodlots, et cetera.)

Problem 4. What protective work is suggested for your own situation? (Silt traps, detention dams, planting, stream bank protection, revetments, et cetera.)

### D. Ways of reaching community

Problem 1. How can you give aid to your family and community? (Conversation, papers, books, group meetings, posters, information concerning available assistance, et cetera.)

## VI. Responsibility

In a democratic society, with whom does the ultimate responsibility for proper land use lie? In addition to the individual, what groups and machinery are available for effectuating planned land use?

### A. Individual

1. Attitude toward conservation and land use
2. Individual farm or ranch unit management

### B. Local

1. Soil Conservation District
2. Grazing District
3. County planning boards

### C. State or federal

1. State planning boards and zoning agencies
2. State college and extension agencies
3. Federal agencies

